



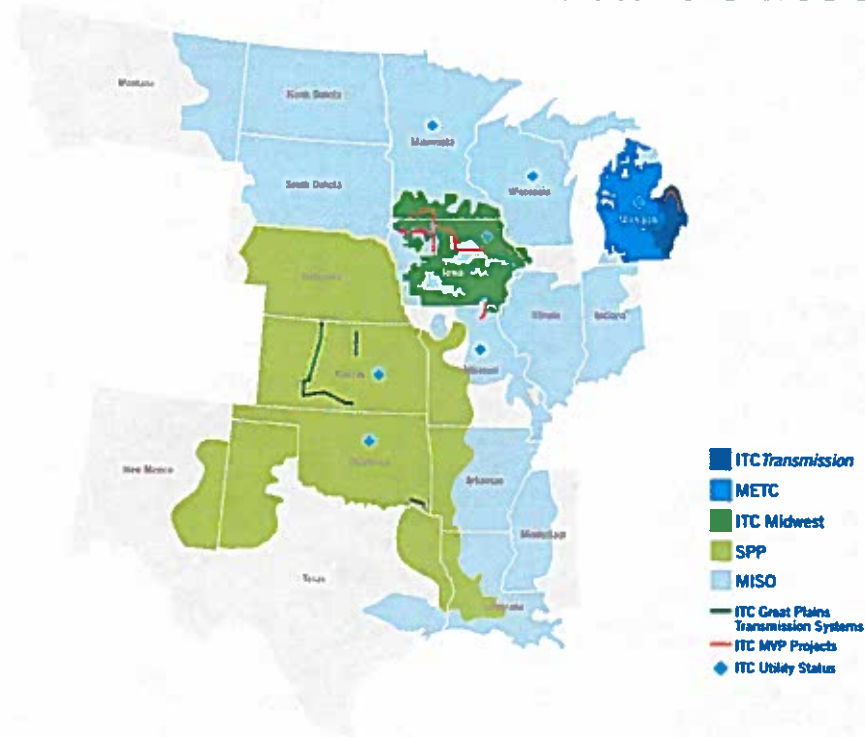
# ***ITC: Modernizing the Grid***

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Vice President, ITC Holdings Corp., and President, ITC Michigan



# ABOUT ITC

**\$6.2B** Invested In Infrastructure Since 2003



- 4 Subsidiaries in 8 states
- 15,700 Circuit miles
- 90,000 Square mile service territory
- 600+ Employees making a difference
- Member of 4 RTOs
- Flexible business model that drives value
- FERC-regulated independent transmission company



# SYSTEM STATISTICS

	<b>ITC Transmission</b>	<b>METC</b>	<b>ITC Midwest</b>	<b>ITC Great Plains</b>
<b>SYSTEM PEAK LOAD</b>	12,745MW	9,469MW	3,724MW	—
<b>SERVICE AREA</b>	Southeast Michigan	Lower Peninsula of Michigan	Portions of Iowa, Minnesota, Illinois and Missouri	Serves SPP and South Central Region
<b>TOTAL TRANSMISSION MILES</b>	~ 3,100	~ 5,600	~ 6,600	~440
<b>RTO MEMBERSHIP</b>	MISO	MISO	MISO	SPP
<b>ESTABLISHED</b>	Assets Acquired February 28, 2003	Assets Acquired October 10, 2006	Assets Acquired December 20, 2007	Formed August 18, 2006



# OUR COMMITMENT SINCE INCEPTION

## **Deliver customer benefits unique to ITC's business model:**

- Improve and maintain system reliability
- Reduce system congestion
- Expand access to competitive energy markets
- Facilitate interconnection of new generation
- Lower overall cost of delivered energy



# ITC's RANGE OF CUSTOMERS





# CUSTOMER FOCUS

## Collaborate With Customers

**“They have a dedicated group of folks who are committed to providing quality service... Our experiences have been great.”**

*– Hemlock Semiconductor, 2014*

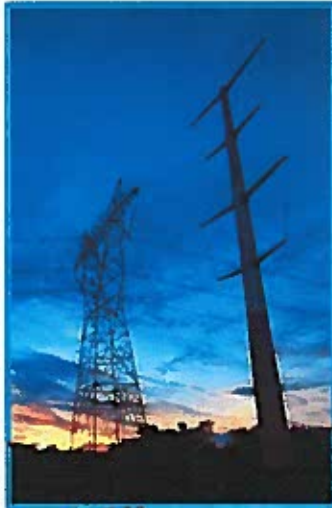


**“We have a great relationship with ITC, they definitely understand our needs.”**

*– Wyandotte Municipal Services,  
Wyandotte, Michigan*



# ITC MICHIGAN



## Two Operating Companies:

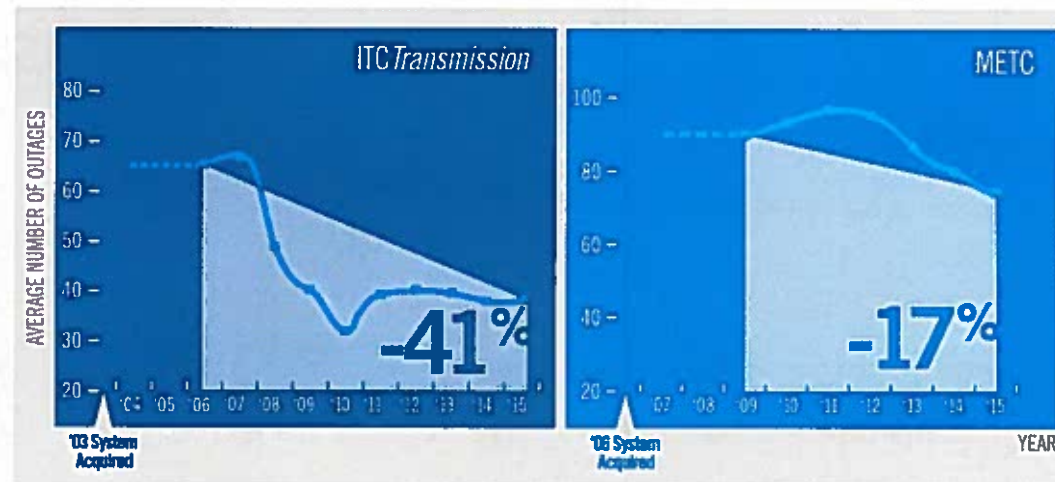
- *ITCTransmission* – acquired 2003
- Michigan Electric Transmission Company (METC) – acquired 2006
- Combined:
  - Transmission Lines – 8,700 circuit miles
  - Transmission Towers and Poles – 55,600
  - Substations – 283
  - Capital Investment – \$3.4B to date
  - *ITCTransmission* has reduced the average number of outages on its system by 41% since 2003
  - METC has reduced the average number of outages on its system by 17% since 2006



# ITC MICHIGAN

## Modernizing and Maintaining the Transmission Grid

Outage Decrease Under ITC Ownership  
100kV and above | 3-year rolling averages



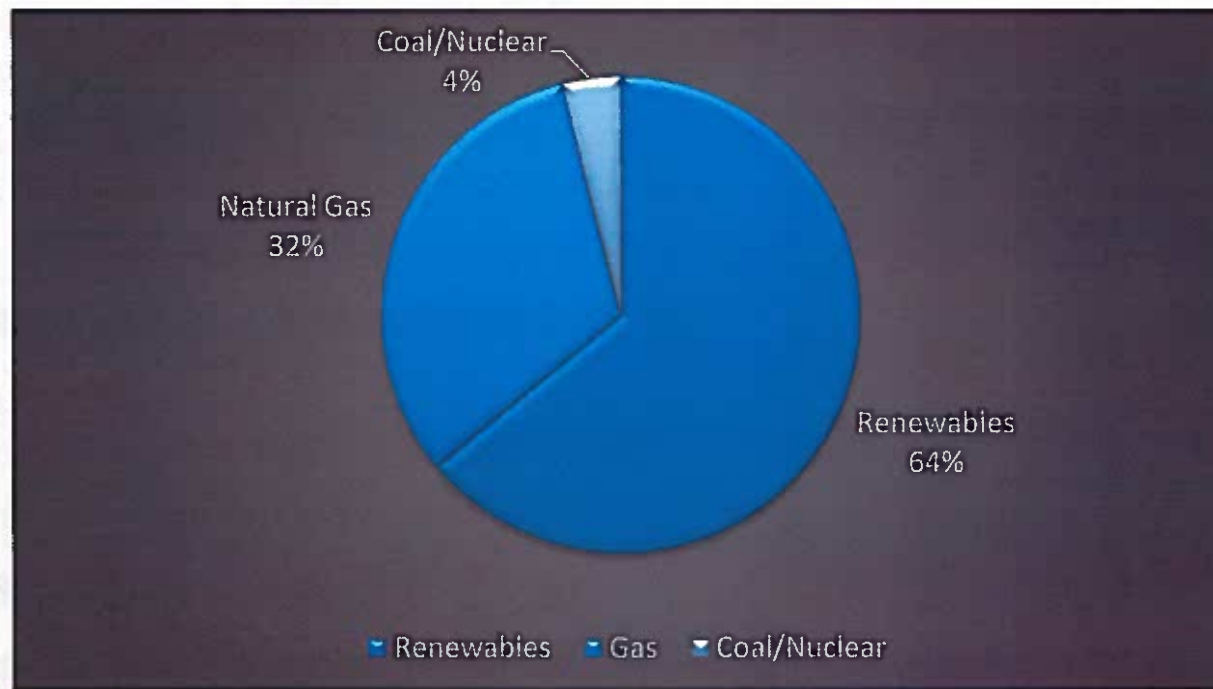
ITC has steadily reduced the average number of outages on the three transmission systems we have acquired beginning in 2003.





# ITC MICHIGAN

***1,592 MW of Connected Generation in Michigan Since 2003***



# VALUE PROPOSITION

## Building a Better, Stronger Grid

- Ensuring the connection between consumers and the energy they need is efficient, reliable and cost-effective
- Enabling electricity market competition to drive a robust economy
- Providing customers with solutions to best meet the energy needs of the 21<sup>st</sup> century economy



# VALUE OF ITC: RENEWABLE ENERGY

Breakout of customer savings between 2008 and 2014 in avoided renewable energy capital costs, according to ICF International:

- Michigan projects saved customers approximately **\$250 million** in avoided renewable energy production costs.



# VALUE OF ITC: MARKET EFFICIENCY



Breakout of customer savings between 2010 and 2015 in reduced energy production costs in the MISO region due to decreased system congestion, according to ICF:

- Savings to Michigan customers: **\$111 million**

# VALUE OF TRANSMISSION – OTHER PERSPECTIVES

## *Economy and Jobs*

Predicted transmission investment of \$12 to \$16 billion in the U.S. from 2010 to 2030 is estimated to stimulate:

- \$30 to \$40 billion in annual economic activity.
- Support 150,000 to 200,000 full-time jobs each year over the 20-year period.





# VALUE OF TRANSMISSION – OTHER PERSPECTIVES

## *Economy and Jobs - Michigan*



ITC's transmission investments and operations support the economy and jobs in Michigan:

- In 2014, ITC Michigan's operating expenses helped support 3,000 direct and indirect jobs, and \$270 million in spending throughout the state's economy.
- About 70% of ITC Michigan's capital investments from 2007-2014 remained in the state, supporting employees and vendors.



Source: Anderson Economic Group analysis of data sourced from ITC Holdings Corp.

# INSIDE AN ELECTRIC BILL

## Generation

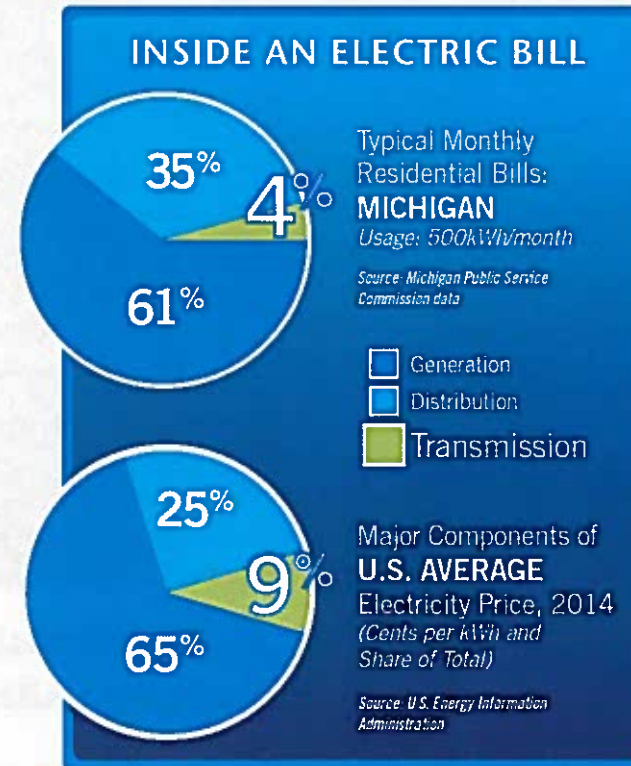
This charge reflects the amount of electricity you use - the energy that comes from power plants and other facilities to homes and businesses.

## Distribution

This fee covers the local, lower-voltage power lines and associated facilities that transport the electricity from distribution substations to homes and businesses.


## Transmission

This is the cost of delivering electricity via high-voltage power lines and associated facilities that transmit the electricity from power plants to distribution substations.



# GRID INVESTMENT NEEDED

**Projected system needs to solve today's energy challenges:  
\$120 - \$160 billion investment per decade through 2030\***



## STRESSED, INADEQUATE GRID

21st Century Requires  
More Flexible,  
Accessible Grid



## REGIONAL INFRA- STRUCTURE

Intra and Inter- regional  
Connectivity  
Address Distributed  
Generation/MicroGrids



## CHANGING GENERATION FLEET

EPA Rules,  
State-by-State  
Needs,  
Plant Closures



## NEW DEMANDS AND USES

Support technology  
and policy  
developments



## PLANNING REFORM

Planning reform could  
save billions

# AGING INFRASTRUCTURE

**“Electric power outages and blackouts cost the nation about \$80 billion annually.”**

*— Berkeley Lab/U.S. Department of Energy*

“Loss of power for even a few seconds across a site can be a million dollar and upward event for us.”

*— Dow Corning Corporation, an ITC customer*

Society Runs  
on Electricity



“Power outages close schools, shut down businesses and impede emergency services, costing the economy billions of dollars and disrupting the lives of millions of Americans.”

*— President's Council of Economic Advisers /  
U.S. Department of Energy*

**\$16 million per day:**  
**estimated cost of a power outage**  
**at a major vehicle manufacturers'**  
**technical center in Michigan**



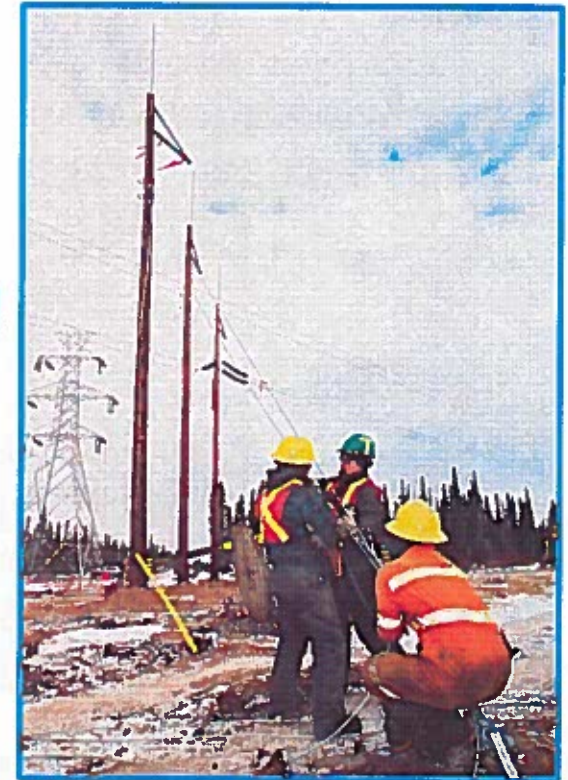
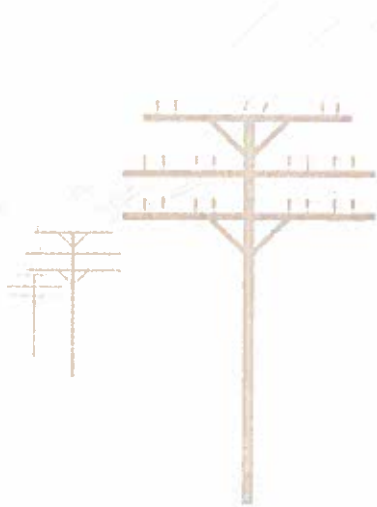
# AGING INFRASTRUCTURE

**Power Plants:** More than 30 years old

**Transformers:** More than 40 years old

**Transmission Lines:** 70% are 25+ years old

**Circuit Breakers:** 60% are 30+ years old

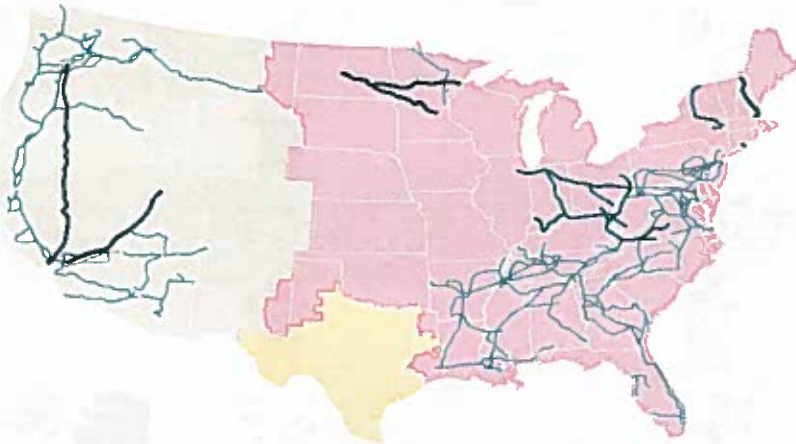




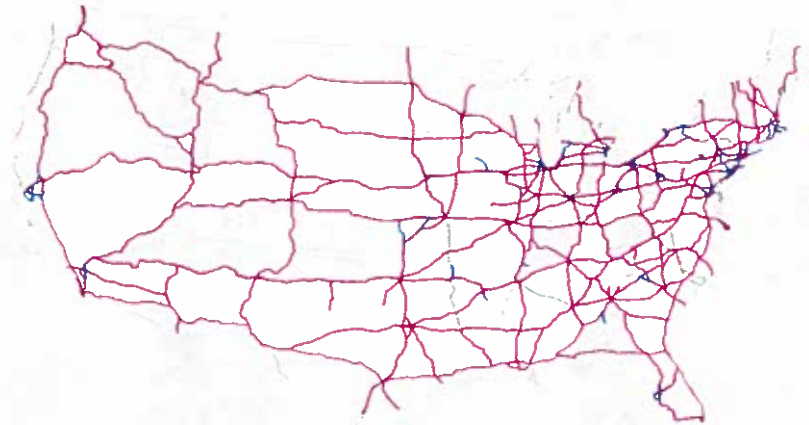
# REGIONAL INFRASTRUCTURE

*Issue: How Transmission has not been fully developed*

**High-Voltage Transmission System**

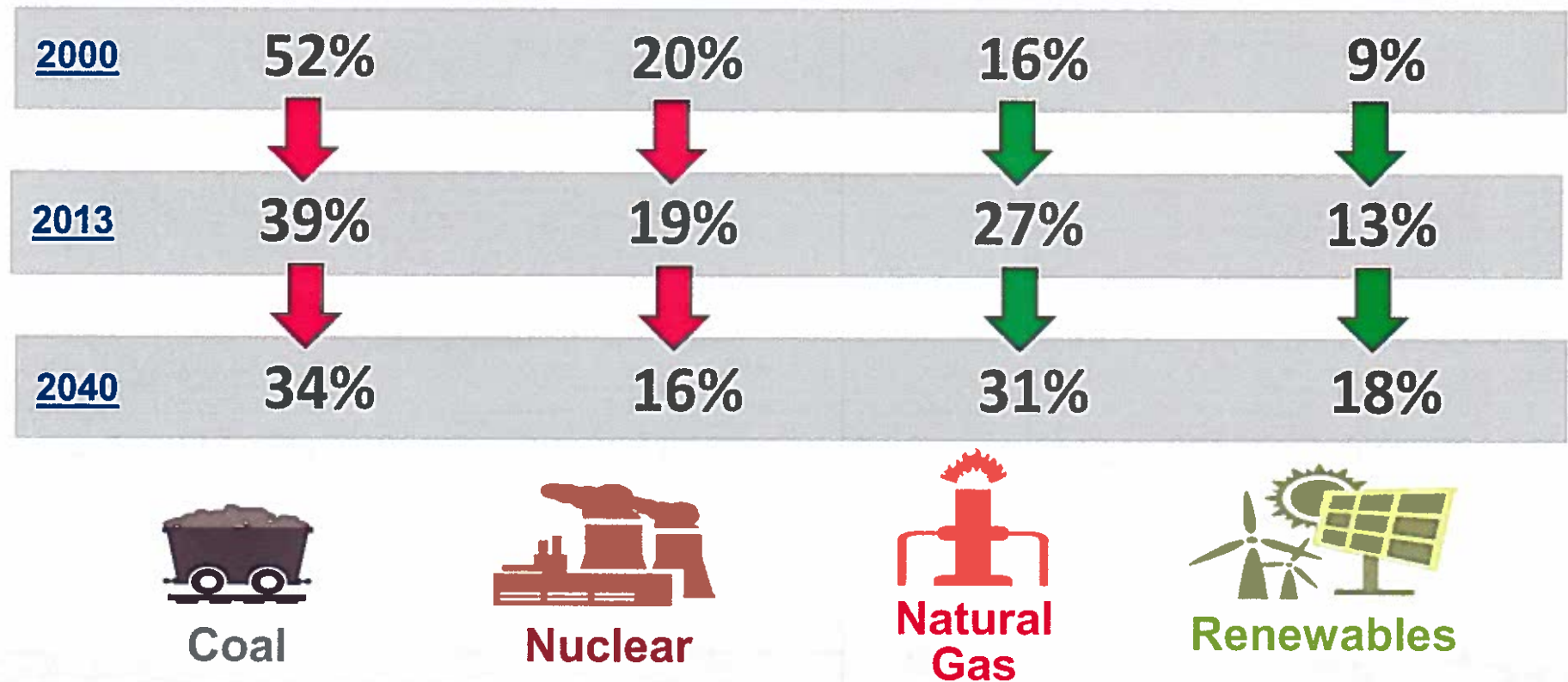


**Interstate Highway System**



*Represents lines of 500 kV and above*

# CHANGING GENERATION MIX



# NEW DEMANDS AND USES

A modern, interconnected grid needed to support 21<sup>st</sup> Century technology and policy developments:

- Distributed generation
- Demand response
- Efficiency programs
- Electric vehicles
- Renewable energy mandates



# CONSUMER AWARENESS

## *Customer Trends*

**Desire for higher reliability**

**Increasing need for high-quality, uninterrupted power in homes and businesses**

**Increasing environmental awareness**

**Public concern for the environmental impacts of energy generation is rising**



\* Polling results from survey conducted online by Research Now, an independent opinion research company, with a nationally representative audience of 800 U.S. adults age 18+. The precision of online polls is calculated using a credibility interval, with a poll of 800 accurate to roughly +/- 4 percentage points.

\*Quotation from blinded interviews with senior-level officials engaged in energy-related decisions at their organizations conducted by an independent interviewer.



# PLANNING REFORM: WIRES REPORT

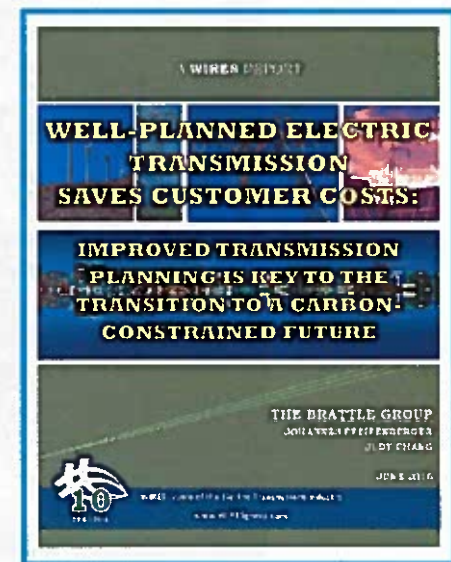
***Electric transmission can save customers billions in transition to a low-carbon future.***

**Today:** Traditional RTO planning is focused primarily on reliability and incremental fixes.

**Call for reform:** Rapidly evolving energy landscape – shift in generation mix, emerging technology and environmental regulation – requires new approach.

**What's needed:** More proactive, anticipatory approach to transmission planning at RTOs to address long-term uncertainties.

**What's at stake:** Transmission planning reforms could save electricity customers as much as **\$47 billion** annually.



Whitepaper: "Well-Planned Electric Transmission Saves Customer Costs: Improved Transmission Planning is Key to the Transition to a Carbon-Constrained Future." – Prepared by economists at The Brattle Group, 2016



# EVOLVING POLICIES

## *Regulatory Climate: Key Issues*

**EPA Clean Power Plan**

**Distributed Generation/Microgrids**

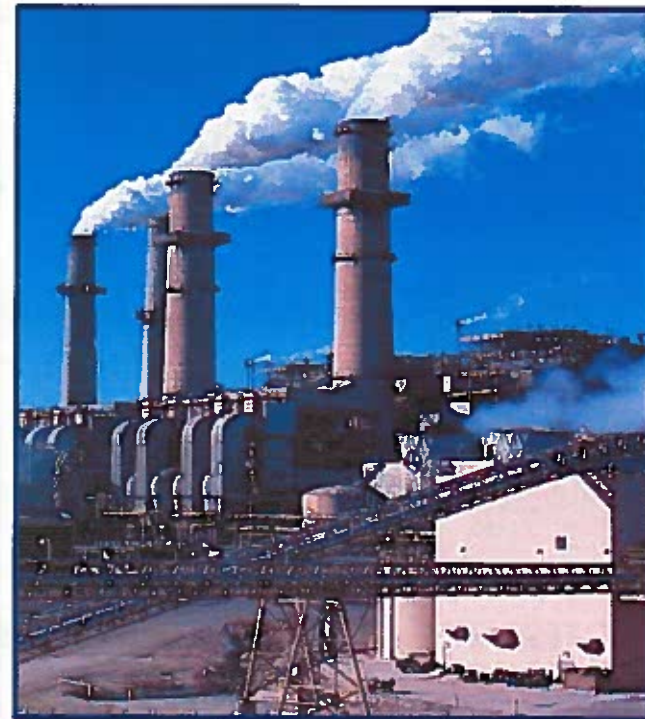
**State Energy Plans**

**State RPS Standards**

**Grid Security**

**Re-regulation**

**Production Tax Credits**



# CLEAN POWER FUTURE

**Regardless of the future of Clean Power Plan, energy policy and market forces are moving U.S. to a cleaner energy future**

- Changes in how and where energy is generated raise questions around resource adequacy and grid reliability
- Transmission is needed to:
  - Interconnect growing renewable penetration
  - Support changes in base power flow resulting from intermittent renewables
  - Connect replacement generation to be sited elsewhere – e.g. natural gas facilities replacing coal plants



# COMPETITION/ROFR



- FERC Order 1000 removes protection for incumbent transmission developers
- Competitive processes are justified where transmission systems have been neglected
- ITC has earned its exclusive right to build necessary transmission in our service territory
- Important to consider: What is best for the customers and the grid in any given state?

# CHALLENGES

## *The Challenge in Michigan*

### **Changes in the Energy Industry Impact Transmission Locally**

#### Generation:

- Many base load plants will be retired
- New forms of generation (wind, solar, biofuels, etc.) coming online

#### New Demands / Uses:

- Demand response, efficiency programs, electric vehicles

#### Policy Focus:

- Increased attention to grid security, environment and creation of related energy policies
- Changes outside the state affect Michigan
- Proposed revisions to the 2008 laws have a focus on energy waste and customer choice

**A robust transmission grid is needed to support these changes**



# COMMON PURPOSE, COMMON ISSUES

Our common purpose: **Serving electricity customers**

Our common issues: **A changing energy landscape**

- Changing generation mix
- Clean Power Plan
- Distributed generation/Microgrids
- Demand response/efficiency programs
- Physical and cyber security
- Rate concerns





# TOWARD A BETTER, STRONGER GRID

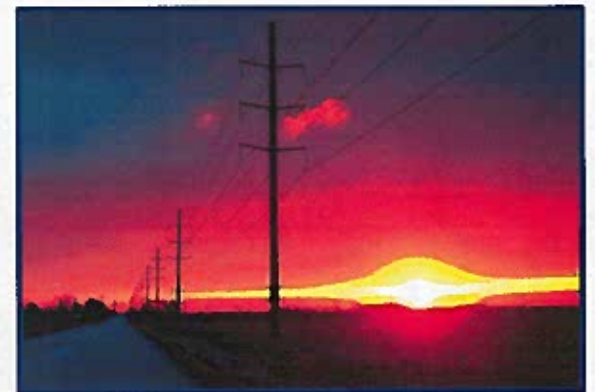
**Utilities | Regulators | Communities | Planners | Customers | Stakeholders**

**Common Purpose:** Ensuring the connection between consumers and the energy they need is efficient, reliable and cost-effective.

**Common Issues:** Evolving energy landscape. Transmission's backbone role in electricity delivery must be factored into planning the grid of the future.

**ITC's commitment:**

- Good stewards of the grid
- Respect for the environment
- Assess development opportunities from the perspective of what is good for customers and the grid





*Thank You*

